



Gaston Technical Institute

A Division of North Carolina State College

The School of Engineering

Raleigh, North Carolina

ANNOUNCEMENTS

FOR THE SESSION 1959-1960

**1025 West Franklin Avenue
Gastonia, North Carolina**

OFFICIAL COLLECTION
Gaston College
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STATE COLLEGE RECORD

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WHAT G. T. I. MEANS TO ME

(Composed by Students attending G.T.I.)

As a student in the new Gaston Technical Institute two-year college program, I have realized the advances that have been made and that are continually being made at our school. Curricular changes, faculty expansion, equipment increases, lab facilities, and our new location in a more spacious and modernized building are some of the factors that are making G. T. I. a school of which to be proud.

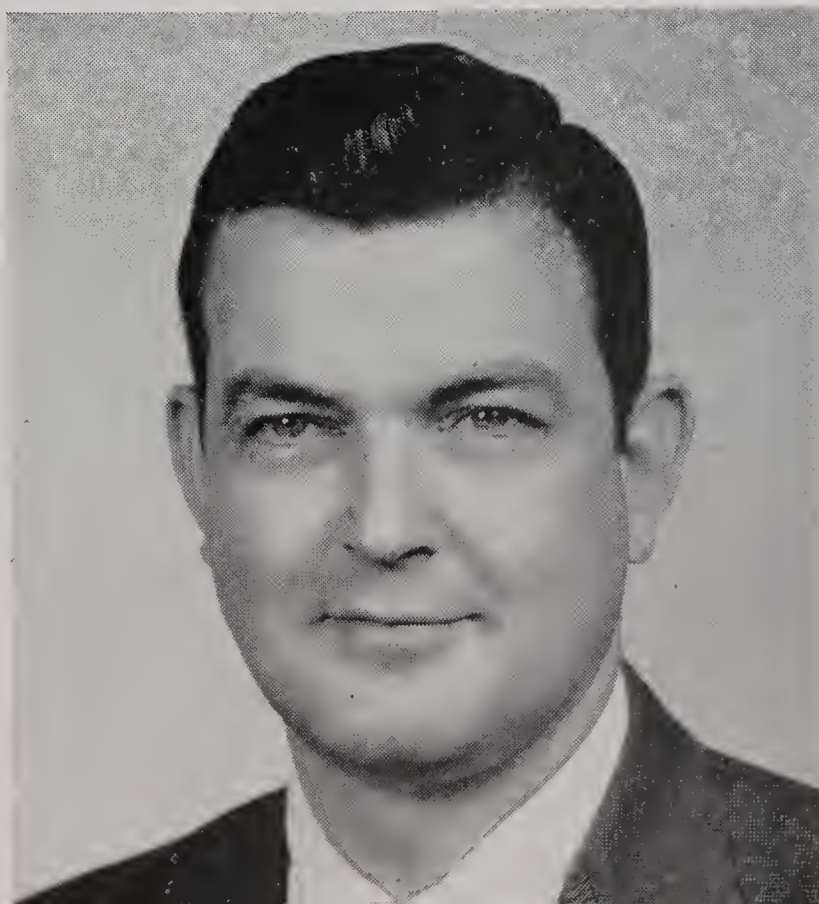
To me, Gaston Tech has meant more than a school, it has meant a way of life. I came in search of an education in a technical field. I was frightened at the thought of going out into the world to earn a living. I was confused and uncertain about what line of work I should follow. I wanted a job that I would enjoy doing and one that would enable me to support my future family. Due to several reasons I knew that I couldn't attend a University or a full four-year college, and I almost despaired of going to school at all. Then I learned of the courses being offered at Gaston Technical Institute, and found that the school was a part of North Carolina State College. After investigating the financial aspects of it, I enrolled and have been well pleased with the entire set-up.

At a small school such as Gaston Tech, the instructors take more time with your individual problems and seem to go out of their way to help you. Here you are not tagged with only a number or last name, but you have a personality that is taken under consideration. Our teaching staff is expanding to offer more courses and to keep the classes small. It is therefore possible to obtain more complete learning and much easier to have individual questions answered or discussed.

Job opportunities are no problem for the graduate. They have found varied offers from a number of outstanding companies and with private industry. The possibilities of Gaston Technical Institute are unlimited, and the person entering this phase of education is hampered only by his lack of initiative and abilities.

I am glad to be a part of this school now and to be able to call Gaston Tech the school from which I will be graduated. I feel sure that the theory and training in the aspects of engineering which I have acquired here will prove invaluable to me in the future.

W. R. Halstead, Director





New Home of the Gaston Technical Institute

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FOREWORD

The Gaston Technical Institute was established in 1952. The industrial and business men of Gaston County donated \$50,000 toward the purchase of a suitable location. The money was used to buy the Todd residence at 510 West Airline Avenue, Gastonia, and to construct a laboratory building on the rear of the lot.

The Gaston Technical Institute is a non-profit, educational institution, offering courses in four fields of technology and covering a two-year span. Upon successful completion of one of these courses in Civil, Electrical, Electronics, or Mechanical and Production Technology, the student will be awarded an Associate in Applied Science Degree by the Engineering School of North Carolina State College.

The Engineering School of North Carolina State College is responsible for the academic program and for the staff appointments. The school is operated under the auspices of The School of Engineering by The College Extension Division.

A deed dated October 2, 1956 was presented by Mr. Harold Mercer, Vice-President and General Manager of Firestone Textiles, to Mr. C. C. Dawson, Chairman of the local Citizen's Advisory Board of the Gaston Technical Institute. The deed conveyed three large brick buildings to the Consolidated University of North Carolina. These buildings at 1025 West Franklin Avenue now make up the home of the new Gaston Technical Institute. The new quarters were formally dedicated in ceremonies on November 7, 1958.

Purpose

The purpose of the Gaston Technical Institute is to train young men to enter the field of Engineering as qualified aides, able to do the many different jobs that are demanded in this field of endeavor. The education and training received will enable the graduate to be able to take his place in that area between the engineer and the skilled craftsman.

Buildings and Facilities

The three buildings, comprising the working area, contain 42,000 square feet. The ground floors are occupied by the following laboratories: electronic, electrical machinery, A-C circuits, field surveying storage, machine shop, and welding.

The first floors of the East and West buildings house the classrooms, general drafting rooms, physics laboratory, and student lounges. In the administration building are the auditorium, offices, general lounge, student store, and cafeteria.

The upper floors house the library, additional classrooms, storage, and instructors' offices. For very extensive research beyond the normal level of the technical institute, the students and instructors may draw from the D. H. Hill Library at North Carolina State College.

THE ENGINEERING TECHNICIAN *

Modern industry has reached its high level of production not so much through independent individual effort as through teamwork. The engineering technician, in particular, makes his contribution primarily as a member of the engineering team. To do the best job, he should be familiar with the work of the other members of the team, which normally consists of the engineer, several technicians, and a group of skilled workmen.

The Place of the Engineering Technician

An engineering technician engages in work that requires some of the knowledge and skills of both the professional engineer and the skilled craftsman. He is required to know basic theories and to apply them in helping to solve the complex problems of modern industry. In this way the engineering technician carries out vitally important assignments and takes his place on the engineering team.

The engineering technician usually specializes in one aspect of engineering. He might, for example, work as a draftsman, a detail designer, a cost estimator, a production supervisor, a research assistant, a quality control supervisor, a time study man, an expeditor, a technical salesman, or a production planner.

The curriculums for a two-year technical institute include a strong background in mathematics, physics, electricity, English, and management. Special emphasis is placed on the application of these courses to the student's own field of specialization. The engineering technician has a dual role in that he must know much of know-why of the engineer as well as the know-how of the skilled laborer. He must possess both mental and manual knowledge, as his principal job is to bind the dream, or idea, of the engineer to the finished project.

When the engineering technician has successfully completed his training, he has a broad choice of technical positions at excellent starting salaries, and he may qualify for rapid promotion in his field.

At the Gaston Technical Institute, an attempt is made to meet the demand of large industries for trained personnel, by giving the students a practical knowledge of the field in which they are specializing. Many of the graduates are immediately employed in the industries nearby.

(*“The Engineering Technician”, Technical Institute Division, American Society for Engineering Education—Published by Technical Education News, McGraw-Hill)

GASTON TECHNICAL INSTITUTE COLLEGE CALENDAR—1959-1960

Summer Sessions, 1959

First Session

June 8	Monday	Registration for summer students.
June 9	Tuesday	Class Assignments. Late registration fee of \$5.00.
June 10	Wednesday	Classes begin.
June 15	Monday	Last day for registration or refund.
June 19	Friday	Last day for dropping a course without failure.
July 6	Monday	Last day to withdraw from school.
July 15	Wednesday	Last day of classes.
July 16-17	Thursday-Friday	Final Examinations.

Second Session

July 20	Monday	Registration for summer students
July 21	Tuesday	Class Assignments. Late registration fee of \$5.00.
July 22	Wednesday	Classes begin.
July 27	Monday	Last day for registration or refund.
July 31	Friday	Last day for dropping a course without failure.
Aug. 14	Friday	Last day to withdraw from school.
Aug. 21	Friday	Last day of classes.
Aug. 24-25	Monday-Tuesday	Final Examinations.

Fall Semester, 1959

Sept. 14-16	Monday-Wednesday	Freshman Registration and Orientation.
Sept. 17	Thursday	Upperclass Registration. Late registration fee of \$5.00 payable by all who register after Sept. 17.
Sept. 18	Friday	Class Assignments.
Sept. 21	Monday	Classes begin. 8:00 a.m.
Sept. 25	Friday	Last day for registration. Last day for refund less \$10.00 registration fee.
Oct. 2	Friday	Last day to add a course.
Oct. 9	Friday	Last day to drop a course without failure.
Nov. 14	Friday	Mid-term reports.
Nov. 25	Wednesday	Thanksgiving holiday begins at 12:00 noon.
Nov. 30	Monday	Classwork resumes. 8:00 a.m.
Dec. 1	Tuesday	Last day to withdraw from school.
Dec. 16	Wednesday	Holidays begin. 5:00 p.m.
Jan. 4	Monday	Classwork resumes. 8:00 a.m.
Jan. 26	Tuesday	Last day of classes.
Jan. 27-29	Wednesday-Friday	Final Examinations.

Spring Semester, 1960

February 3	Wednesday	Registration of new students.
February 4	Thursday	Upperclass registration. Testing of New students. Late registration fee of \$5.00 payable by all who register after Feb. 4.
February 5	Friday	Class Assignment.
February 8	Monday	Classes begin. 8:00 a.m.
February 12	Friday	Last day for registration. Last day for refund less \$10.00 registration fee.
February 19	Friday	Last day to add a course.
February 26	Friday	Last day to drop a course without failure.
March 25	Friday	Mid-term reports.
April 13	Wednesday	Easter Holiday begins at end of classes.
April 21	Thursday	Classwork resumes. 8:00 a.m.
April 22	Friday	Last day for withdrawing from school.
May 27	Friday	Last day of classes.
May 30-		
June 1	Monday-Wednesday	Final Examinations.
June 2	Thursday	Commencement.
1960 Sessions of Summer School dates will be announced later.		



GASTON TECHNICAL INSTITUTE

Officers of Administration

W. C. FRIDAY, B.S., North Carolina State College; L.L.B., University of North Carolina; President, Consolidated University of North Carolina

C. H. BOSTIAN, A.B., Catawba College; M.S., Ph.D., University of Pittsburgh; Chancellor, North Carolina State College

J. H. LAMPE, B.S., M.S., Dr. Eng., Johns Hopkins University; Dean of School of Engineering, North Carolina State College

R. G. CARSON, JR., B.S., Clemson College; M.S., Georgia Institute of Technology; Ph.D., University of Michigan; Director of Instruction, School of Engineering, North Carolina State College

J. G. VANN, Business Manager, North Carolina State College

E. W. RUGGLES, B.S., M.S., North Carolina State College; Director, Division of College Extension, North Carolina State College

Administration

WILLIAM R. HALSTEAD, B.E.E., Georgia Tech; P.E. (Georgia); Director, Gaston Technical Institute

PAUL V. SMITH, A.B., Lenoir-Rhyne College; M.Ed., University of North Carolina; Assistant to the Director and Registrar

MARY E. MCQUERE, Administrative Assistant

GLENDA JACKSON, Office Assistant

NELL D. MCCARTER, Dining Room Supervisor

EDWARD A. JACKSON, Maintenance Supervisor



Faculty

GEORGE H. BENOLKEN, JR., B.A., Elon College; Mathematics

RAYMOND E. FUHRER, B.S.E.E., University of Pittsburgh; Electrical Technology

A. CLAY GROVES, Electronics

JAMES P. HUFFSTETLER, B.E.E., North Carolina State College; Electronics

JOHN M. JENKINS, JR., B.S., M.A., North Carolina State College; Drawing

PAUL C. LUNSFORD, B.S., Appalachian State Teachers College; Mathematics

ELEANOR M. MCARVER, B.S., Madison College; English—Librarian

ROBERT M. MICHAEL, B.M.E., North Carolina State College; Mechanical and Production Technology

JERRY G. REID, B.S., Appalachian State Teachers College; Physics

MARY CLAIRE SANDERS, A.B., Woman's College; English

V. PATRICK THOMPSON, B.C.E., North Carolina State College; Civil Technology



CITIZENS ADVISORY BOARD

GASTON TECHNICAL INSTITUTE

- C. C. Dawson, Chairman, Cramerton, N. C.
Executive Secretary, Combed Yarn Spinners Association, Gastonia, N.C.
- Alexander W. Bell, Mount Holly, N. C.
Executive Vice-President, American-Efird Mills, Inc., Mount Holly, N.C.
- Charles K. Bryant, Sr., Gastonia, N. C.
Chairman of the Board, Bryant Electric Repair Co., Inc. and Bryant Supply Co., Inc., Gastonia, N. C.
- J. A. Hendley, Stanley, N. C.
General Manager, Talon, Inc., Stanley, N. C.
- J. R. Hudson, Lowell, N. C.
Insurance, Lowell, N. C.
- Howard K. Houser, Cherryville, N. C.
Secretary-Treasurer-General Manager, Rhyne-Houser Manufacturing Co., Inc., Cherryville, N. C.
- Hunter Huss, Gastonia, N. C.
Superintendent Gaston County Schools, Gastonia, N. C.
- Joseph W. Lineberger, Belmont, N. C.
President, Linford Mills, Inc., Belmont, N. C.
- Don Maddox, Gastonia, N. C.
Vice-President, Textiles, Inc., Gastonia, N. C.
- Harold Mercer, Gastonia, N. C.
Vice-President, General Manager, Firestone Textiles, Gastonia, N.C.
- Caldwell Ragan, Gastonia, N. C.
Executive Vice-President, Treasurer, and General Manager, Trenton Mills, Gastonia, N. C.
- Coit M. Robinson, Lowell, N. C.
President, United Spinners Corp., Lowell, N. C.
- Sam M. Stewart, Gastonia, N. C.
President, Moore & Stewart, Inc., Gastonia, N. C.
- Woodrow Sugg, Gastonia, N. C.
Superintendent Gastonia City Schools, Gastonia, N. C.
- A. K. Winget, Jr., Gastonia, N. C.
Vice-President, Citizens National Bank, Gastonia, N. C.
- Frank A. Young, Gastonia, N. C.
President, F. A. Young Machine Co., Gastonia, N. C.
- Charles B. Zeigler, Gastonia, N. C.
Chairman of the Board, Public Service Company of N. C., Gastonia, N.C.

THE NEED FOR A TECHNICAL EDUCATION

Recent industrial development of the South has presented a new demand for trained engineering technicians. This demand exceeds that for engineers by approximately eight to one, but engineering technicians have until recently been unable to receive their training in the South.

An official of a large industrial plant, recently located in our State, reported that their operation was retarded two years because of the lack of properly trained engineering technicians. Laborers and engineers were available.

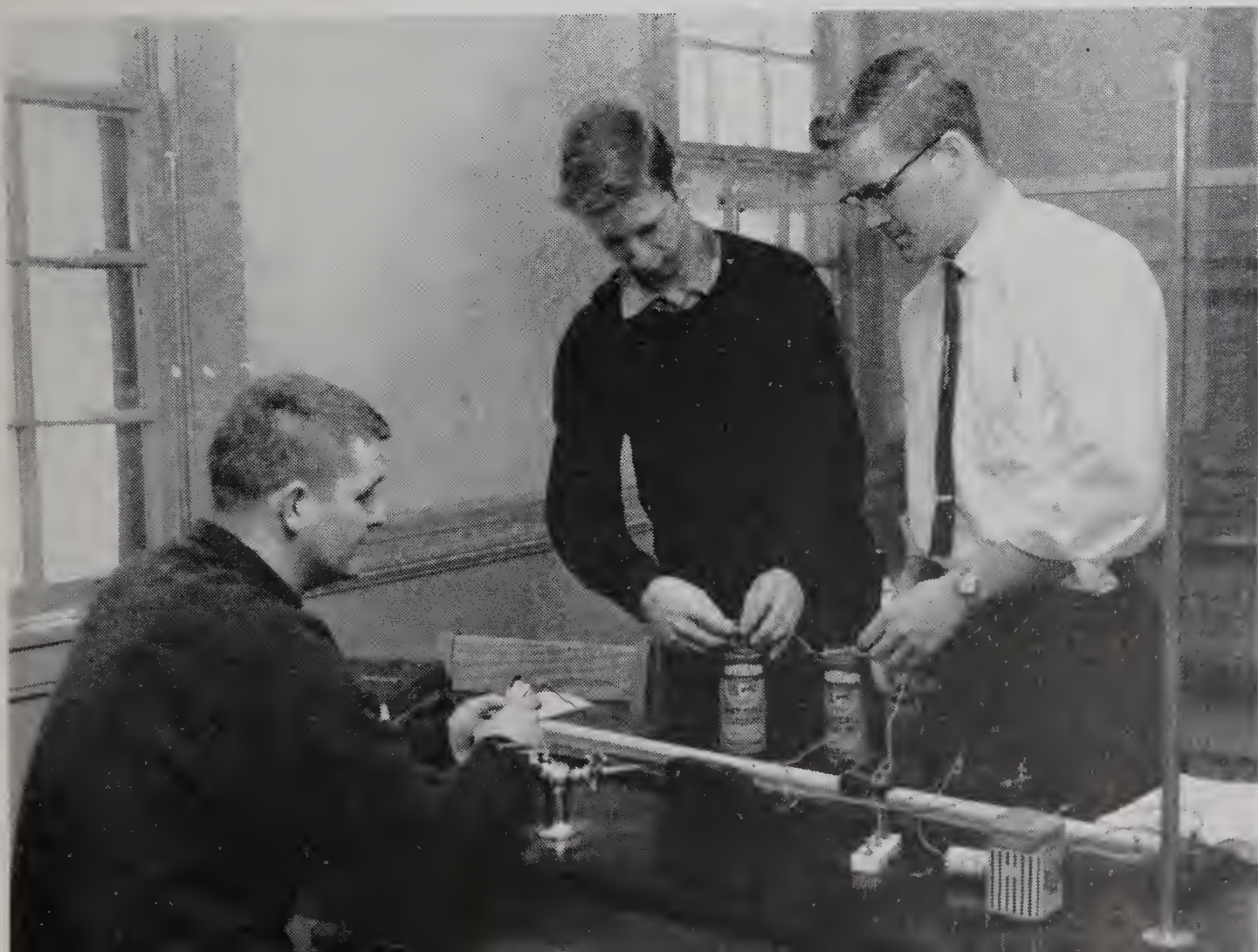
Industry in the South cannot develop faster than these engineering technicians are available. Realizing this need, North Carolina State College has pioneered in the field and established the first Technical Institute in North Carolina and one of the first in the South.

The work for which the training prepares young men lies principally in the middle field of technical activity, between the skilled trades and professional engineering. The courses are designed to prepare young men for specific duties in a specialized field of engineering.

As defined by the Subcommittee on Technical Institutes of The Engineers' Council for Professional Development: "Technical Institute programs are intermediate between the high school or vocational school on one hand and the engineering college on the other . . . The purpose is to prepare individuals for positions auxiliary to, but not in, the field of professional engineering. Curricula are essentially technological in nature, based upon principles of science; require the use of mathematics beyond high school, and emphasize rational processes rather than rules of practice. Curricula are briefer, more intensive, and more specific in purpose than collegiate engineering curricula, although they lie in the same general fields of industry and engineering. Their aim is to prepare individuals for specific technical positions or lines of activity rather than broad sectors of engineering practice."

It was the conclusion of the committee of twenty-five, appointed by the Development Council of North Carolina State College, George P. Geoghegan, Jr., Chairman, that the industries of North Carolina will need more than 5,000 engineering technicians per year for the next five years.

Scientific Methods and Techniques



THE SCHOOL YEAR

Two semesters make up the school year. New classes will be formed at the beginning of each semester, and new students will be accepted at the beginning of either semester. New classes will not be scheduled if there is not enrollment large enough to justify the course being given.

Admission Requirements

Applicant will be considered for acceptance if he is a graduate of an accredited high school, and if he is recommended by his high school principal, or guidance counselor, as having a good moral character. It is strongly recommended that a student have the equivalent of one and one-half units of high school algebra and one unit of high school plane geometry.

Procedure in Applying for Admission

The applicant, if distance is not too great, should make a personal application. An application form and high school transcript blank may be obtained by writing the Director, Gaston Technical Institute, 1025 West Franklin Avenue, Gastonia, N. C., telephone UNiversity 4-4365, or the Division of College Extension, North Carolina State College, Raleigh, N. C.

The personal information called for on the application blank should be completed by the student. This form should then be given to the high school principal along with a stamped envelope addressed to Gaston Technical Institute, 1025 West Franklin Avenue, Gastonia, N. C., and a five-dollar (\$5.00) check or money order to be submitted with the completed high school transcript. This money is applied as half of the registration fee. The application fee may be paid separately, but action on application will not be taken until this deposit is received. It will be refunded to students who are not accepted. It is forfeited by applicants who are accepted, but who do not enroll.

Tuition and Fees

The following fees are due on registration day:

Registration Fee	\$ 10.00 per semester
*Tuition	100.00 per semester
Laboratory Fee	15.00 per semester
Student Activities Fee	6.00 per semester
Medical Fee (Comprehensive Insurance Coverage)	5.00 per semester

*Tuition for out-of-state students is \$150.00 per semester.

Late Registration

An extra fee is charged for registration after the days designated in the calendar. This fee is five dollars (\$5.00).

Medical Fee

In the absence of the usual medical facilities, comprehensive insurance benefits are provided for the approximate nine months of the regular term, beginning 48 hours prior to entrance and ending 48 hours after completion of the semester. This coverage continues even if the student should withdraw from school.

Refunds

A refund of the amount paid the Institute, less the registration fee, is made to a student withdrawing within ten days from the date of registration. No refund will be made if a student withdraws after this 10-day period.

Room and Board

Room and board will range from \$16.00 to \$18.00 per week. Married students can obtain either furnished or unfurnished apartments at various rent levels. Assistance in obtaining suitable living quarters will be given through the business office or the Gastonia Chamber of Commerce.

Cafeteria

The cafeteria is operated on a non-profit basis. Meals (breakfast and lunch) are served, Monday breakfast through Friday lunch. Students not living at home are requested to eat lunch in the cafeteria as most student activities occur during the noon hour.

Books, Equipment and Supplies

All text books, instruments and supplies needed by the student may be purchased at the Bookstore operated by the Institute. Cost of books and laboratory supplies is estimated at \$100.00 for the first semester; \$20.00 for the second semester, and \$60.00 for each of the last two semesters.

Veterans

Veterans attending under provisions of Public Law 550 pay their tuition and fees when they start. A Korean veteran is not considered to be attending under P.L. 550 until such time as he presents a Certificate of Entitlement. To obtain this certificate, the veteran should apply to his local Veterans Administration office. After attending one calendar month, a veteran signs a Veterans Administration Monthly Certificate of Training form in the school office. Thus it is about six weeks before the veteran receives his first allotment. Thereafter it arrives about the twentieth of each month.

Transfer Credit

The Gaston Technical Institute will accept work done at other institutions evaluated on the basis of similar study successfully pursued. However, a minimum of one year residence work is required for graduation.

Graduation Requirements

An Associate in Applied Science degree in the selected technological field will be awarded by North Carolina State College to the applicant who has successfully completed the prescribed course of study.

A fee of \$10.00 covering the cost of diploma, cap, and gown is charged during the last semester prior to graduation.

Grade Systems

	Grade Point Equivalent
A—Excellent	4 quality points for each credit hour
B—Good	3 quality points for each credit hour
C—Fair	2 quality points for each credit hour
D—Passing	1 quality point for each credit hour
F—Failuure	0 quality point for each credit hour
Abs.—Absent from examination	(Equivalent to failure unless excused)
Inc.—Incomplete	(an incomplete signifies that the student has passed final examination but is incomplete in some report or other work assigned by his instructor or that he has an excused absence for the final examination, which will be given him at some later date. An “Inc” must be completed satisfactorily during the next term or it automatically becomes an “F”.)
WP—Withdrawn passing.	(This signifies that a student has withdrawn from school or course voluntarily with a passing grade.)
WF—Withdrawn failure.	(This signifies that a student has been dropped from school or course because of failing grades or excessive absences.)



THE CURRICULA

Description of Courses

The curriculum in Mechanical and Production Technology has as its objective the training of personnel to assist the engineer, or the small industry, in the planning of production equipment, supervision of personnel, and mass production of material goods which will meet the rigid standards of quality. A close scrutiny of the second year course of study will show a wide range of endeavor to familiarize the student with every phase of mechanics.

The Electrical Technology curriculum is designed to train men for the large area of opportunity lying between the electrician's helper and the electrical engineer. The program is founded on a carefully selected group of courses that will enable the graduate to enter a wide number of activities such as drafting, sales, supervision of installations, maintenance of power plants and other electrical equipment, and electrical contracting. Many of these students set up their own small businesses.

The Electronics Technology curriculum aims at the thorough training of men to install, repair, and maintain electronic devices for communications and industrial controls, and to help engineers in the development of new applications of electronic equipment. The future is bright for the electronic graduate as this equipment is now considered essential to our industrial society.

The curriculum for Civil Technology is a new one for Gaston Technical Institute. The State Highway Department has given us excellent equipment to use in training these students, and the department employs the boys during the summer months on road projects as near their homes as feasible. They also pay them a small weekly salary in addition to the invaluable experience.

Course Numbers

The courses are numbered as follows: The first digit signifies the year of study; the second digit signifies the semester in which the course is given; and the third digit denotes the number of the course in that particular field of study.

For example, ET 225 will mean that the course will be taken in the second year, the second semester, and will be the fifth course offered in Electricity.

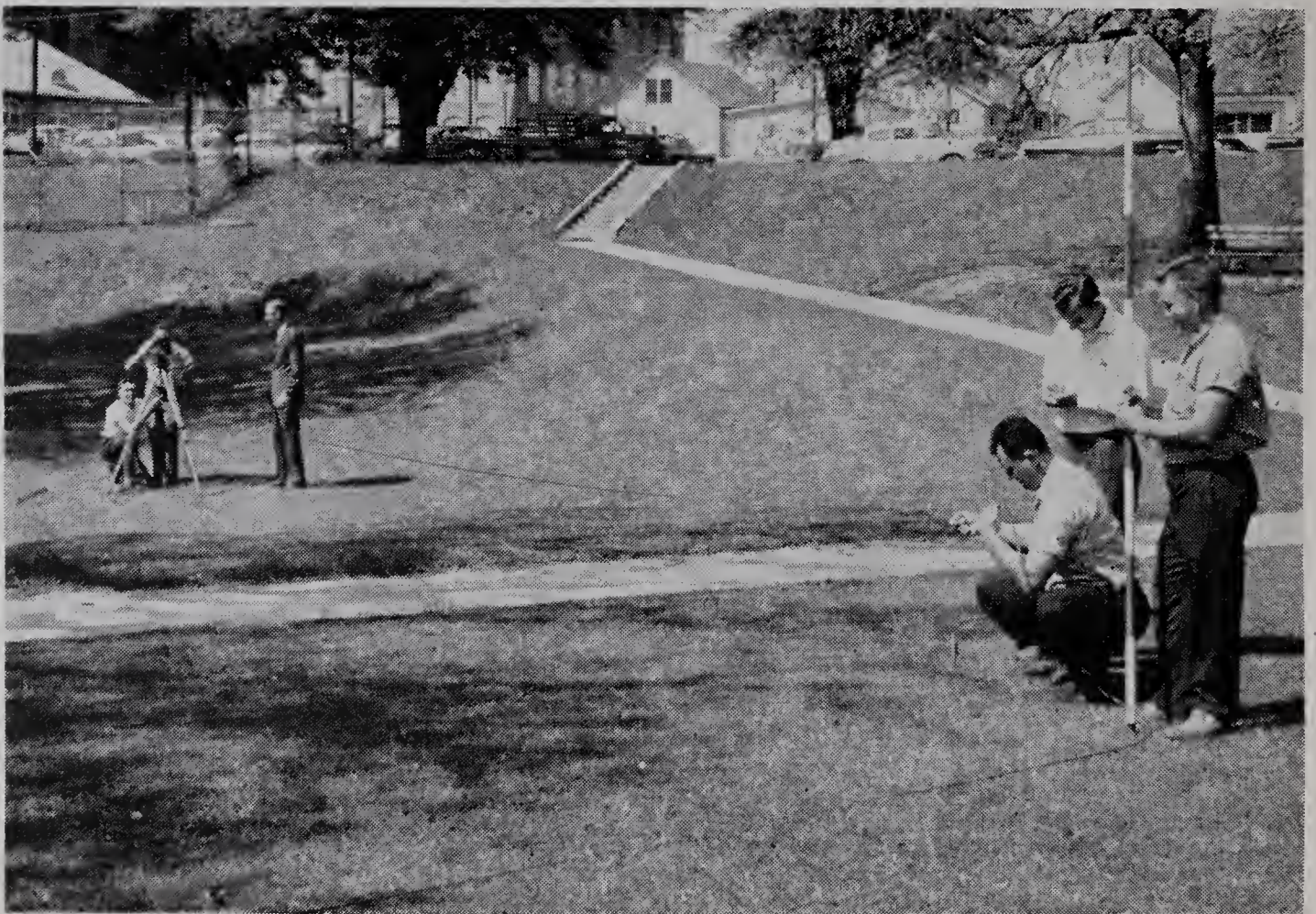
COURSE OF STUDY

Civil Technology

The two-year program in Civil Technology is founded upon a sufficiently broad base of subject matter and courses to equip the graduate for technical work in a number of different career fields. As a technical aid or assistant to the Civil Engineer, the graduate of this program may work in the field of engineering layout of highway and other types of construction; as an estimator for construction contractors; or he may pursue a career in land and property surveying. The program also gives training in methods and equipment used in heavy engineering types of construction and considerations of the provisions and practical applications of construction contracts and specifications.

The purpose of the course in Civil Technology is to equip the student with knowledge of practical applications within the broad field of Civil Engineering, on as wide a basis as may be accomplished in a two-year program.

A more complete description of each course required is found in the back of this catalog.



Field Surveying Practices

CIVIL TECHNOLOGY

FIRST YEAR

1st SEMESTER

Symbols	Subject Title	Rec.	Lab.	TI. Cr.
DT	111—Engineering Drawing	0	6	2
MT	111—Algebra	5	2	5
ENT	111—English	5	0	5
PT	111—Physics I	5	3	6
SP	111—General Shop	0	3	1
		15	14	19

2nd SEMESTER

DT	122—Engineering Drawing	0	6	2
MT	122—Trigonometry	5	2	5
ENT	122—English	5	0	5
PT	122—Physics II	5	3	6
SP	122—General Shop	0	3	1
		15	14	19

SECOND YEAR

1st SEMESTER

CT	211—Plane & Topographic Surveying	3	6	5
DT	215—Highway Drafting	0	6	2
CT	212—Contracts and Specifications	2	0	2
CT	213—Estimates and Costs	2	3	3
CT	214—Control of Construction Materials	2	3	3
		9	18	15

2nd SEMESTER

CT	226—Highway Curves and Earthwork	3	6	5
DT	227—Structural Drafting	0	6	2
CT	227—Construction Methods and Equipment	3	0	3
CT	228—Control of Construction Materials	2	3	3
ENT	223—Technical Reports	2	0	2
		10	15	15

Electrical Technology

The curriculum in Electrical Technology is designed to train technicians for that large area of opportunity lying between the electrician's helper and the electrical engineer. The program is founded on a carefully selected group of courses that will enable the graduate to enter a wide number of activities such as drafting, electrical sales, supervision of equipment, and electrical installations, maintenance of power plants and other electrical equipment, and electrical contracting.

A description of the courses in Electrical Technology will be found in the back of this catalog.



Electric Power Distribution and Utilization

ELECTRICAL TECHNOLOGY

FIRST YEAR

1st SEMESTER

Symbols	Subject Title	Rec.	Lab.	TL. Cr.
DT	111—Engineering Drawing	0	6	2
MT	111—Algebra	5	2	5
ENT	111—English	5	0	5
PT	111—Physics I	5	3	6
SP	111—General Shop	0	3	1
		15	14	19

2nd SEMESTER

DT	122—Engineering Drawing	0	6	2
MT	122—Trigonometry	5	2	5
ENT	122—English	5	0	5
PT	122—Physics II	5	3	6
SP	122—General Shop	0	3	1
		15	14	19

SECOND YEAR

1st SEMESTER

DT	213—Electrical Drafting	0	3	1
ET	211—A-C Circuits	5	3	6
ET	212—Electrical Machinery I	5	3	6
ELT	211—Electron Tubes and Circuits	5	3	6
		15	12	19

2nd SEMESTER

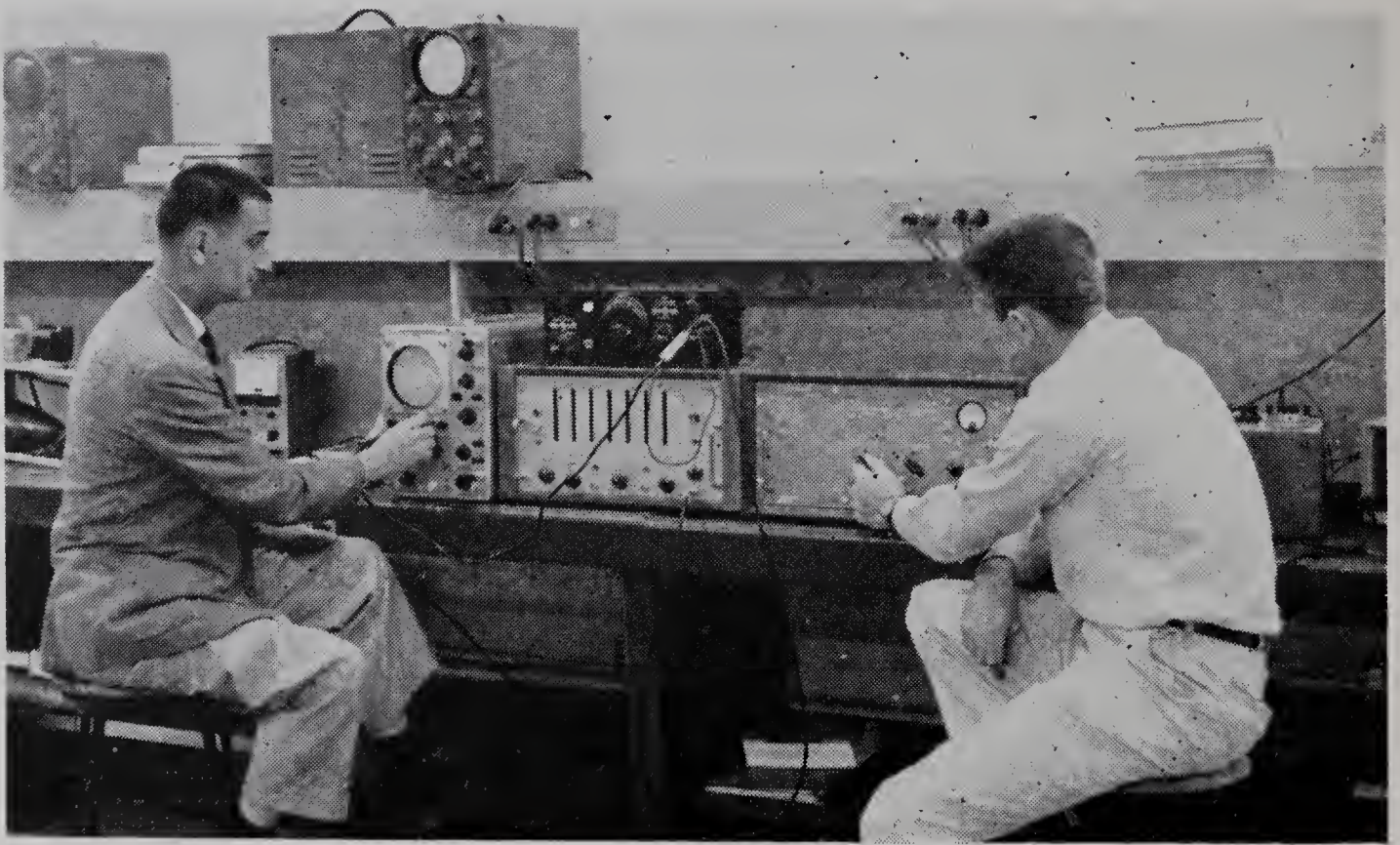
IT	225—Personnel Supervision	3	0	3
ET	223—Wiring and Specifications	2	6	4
ET	224—Electrical Control Circuits	3	3	4
ET	225—Electrical Machinery II	5	3	6
ENT	223—Technical Reports	2	0	2
		15	12	19

Electronics Technology

The curriculum in Electronics Technology is designed to train technicians to install, maintain and repair electronic devices for communications and industrial control, and to prepare technicians to help engineers in the development of new applications of electronic devices.

There is a bright future for the Electronics Technology graduate in the building, installation, and maintenance of the electronic devices that are now considered essential to so many phases of our industrial society.

A description of the courses in Electronics Technology will be found in the back of this catalog.



Advanced Electronic Instrumentation

ELECTRONICS TECHNOLOGY

FIRST YEAR

1st SEMESTER

Symbols	Subject Title	Rec.	Lab.	TI. Cr.
DT	111—Engineering Drawing	0	6	2
MT	111—Algebra	5	2	5
ENT	111—English	5	0	5
PT	111—Physics I	5	3	6
SP	111—General Shop	0	3	1
		15	14	19

2nd SEMESTER

DT	122—Engineering Drawing	0	6	2
MT	122—Trigonometry	5	2	5
ENT	122—English	5	0	5
PT	122—Physics II	5	3	6
SP	122—General Shop	0	3	1
		15	14	19

SECOND YEAR

1st SEMESTER

DT	213—Electrical Drafting	0	3	1
ET	211—A-C Circuits	5	3	6
ET	212—Electrical Machinery	5	3	6
ELT	211—Electron Tubes and Circuits	5	3	6
		15	12	19

2nd SEMESTER

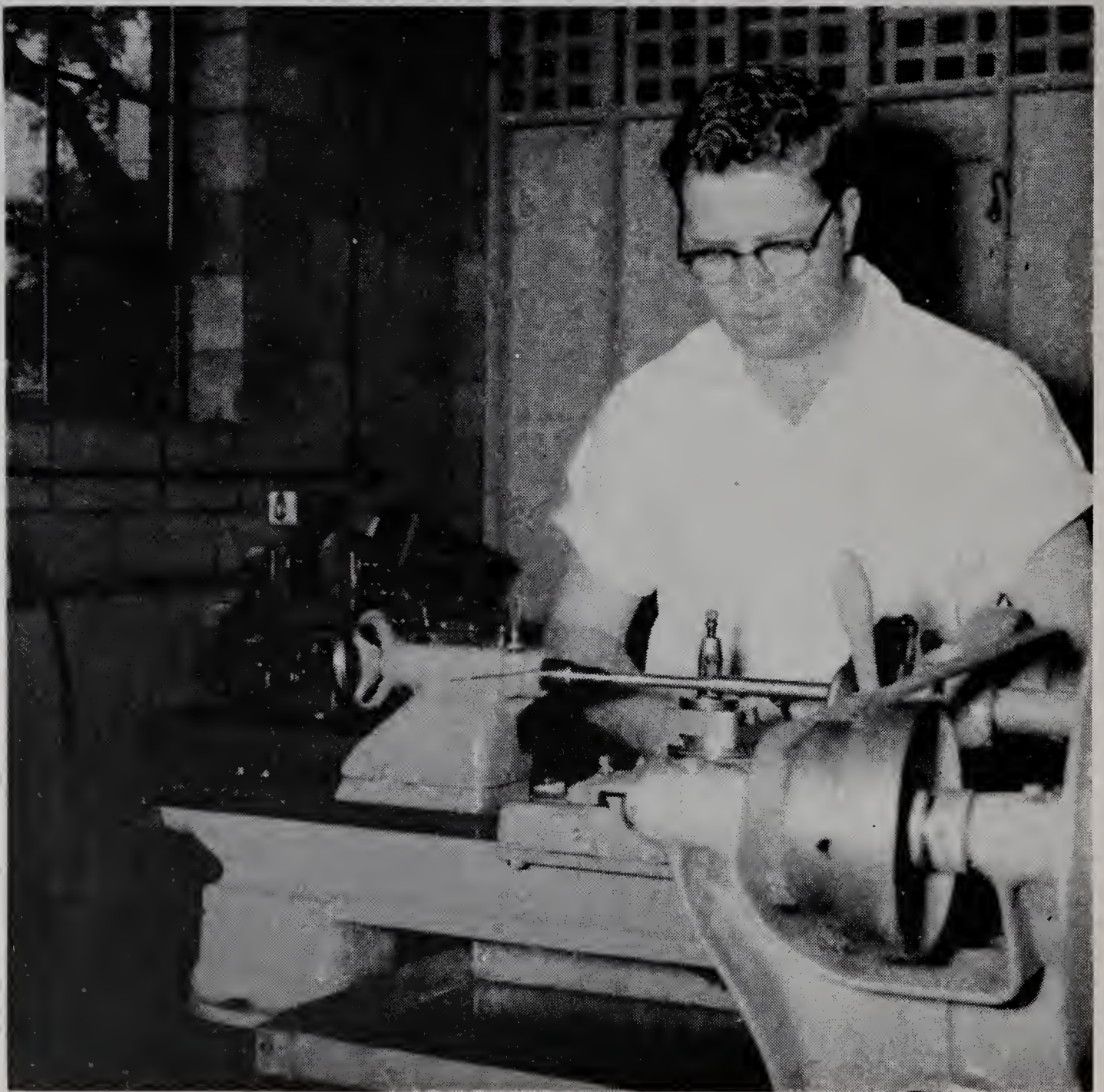
ELT	222—Electronic Circuits and Instruments	3	3	4
IT	225—Personnel Supervision	3	0	3
ELT	224—Codes, Regulations and Specifications	2	3	3
ELT	223—Communication Techniques	5	6	7
ENT	223—Technical Reports	2	0	2
		15	12	19

MECHANICAL AND PRODUCTION TECHNOLOGY

All industries have a demand for engineering technicians who are specifically trained to assist engineers in the design of machinery and equipment and the production of all material goods. Students in this area have specific training in tools and machines with emphasis upon the design and maintenance of production equipment as well as the mass production of goods produced through machine operations.

The development of new and improved machinery and the expansion of industry in the South require an evergrowing force of mechanical technicians for production. The curriculum in Mechanical and Production Technology has as its objective the training of personnel to assist the engineer on the small industry in the planning of production equipment, supervision of personnel, and mass production of material goods which will meet the rigid standards of quality demanded by the public.

A more complete description of the course in Mechanical and Production Technology will be found in the description of the individual courses.



Metalworking Methods and Techniques

Mechanical and Production Technology

FIRST YEAR

1st SEMESTER

Symbols	Subject Title	Rec.	Lab.	TI. Cr.
DT 111	Engineering Drawing	0	6	2
MT 111	Algebra	5	2	5
ENT 111	English	5	0	5
PT 111	Physics I	5	3	6
SP 111	General Shop	0	3	1
		15	14	19

2nd SEMESTER

DT 122	Engineering Drawing	0	6	2
MT 122	Trigonometry	5	2	5
ENT 122	English	5	0	5
PT 122	Physics II	5	3	6
SP 122	General Shop	0	3	1
		15	14	19

SECOND YEAR

1st SEMESTER

SP 213	Machine Shop	0	3	1
IT 213	Tool & Die Design	2	3	3
IT 211	Statics & Strength of Material	5	0	5
DT 214	Descriptive Geometry	0	3	1
IT 212	Materials	3	0	3
ET 213	Electric Circuits & Machines	5	3	6
		15	12	19

2nd SEMESTER

IT 225	Personnel Supervision	3	0	3
DT 226	Machine Drafting	0	3	1
IT 224	Production Technology	4	3	5
SP 224	Machine Shop	1	3	2
ENT 223	Technical Reports	2	0	2
IT 226	Production & Quality Control	5	3	6
		15	12	19

DESCRIPTION OF COURSES

Civil Technology

- CT 211 PLANE AND TOPOGRAPHIC SURVEYING** 5(3-6)
Study and application: taping, transit, level, and stadia in plane and topographic surveying and mapping; survey closures and area computations; care and adjustment of instruments.
- CT 212 CONTRACTS AND SPECIFICATIONS** 2(2-0)
Construction contract documents and specifications; owner, engineer, contractor relationships and responsibilities; bidding procedures; contract performance requirements. Real property and legal aspects of land surveying.
- CT 213 ESTIMATES AND COSTS** 3(2-3)
Analysis of plans and specifications for construction requirements; material quantity survey; labor requirements; complete estimates of costs.
- CT 214 CONTROL OF CONSTRUCTION MATERIALS** 3(2-3)
Application of standard methods of testing and control with respect to materials of construction, including: mortar, brick, concrete, timber, steel, bituminous materials and soils. Elements of design and control of concrete and bituminous mixes.
- CT 226 HIGHWAY CURVES AND EARTHWORK** 5(3-6)
Construction surveys; earthwork computations; route surveys; simple, compound, and spiral curves; vertical parabolic curves; chainage equations.
- CT 227 CONSTRUCTION METHODS AND EQUIPMENT** 3(3-0)
Performance characteristics of construction equipment; ownership and operating costs; construction methods; selection and application of equipment.
- CT 228 CONTROL OF CONSTRUCTION MATERIALS** 3(2-3)
Continuation of CT 214

Drafting

- DT 111 ENGINEERING DRAWING** 2(0-6)
The beginner is taught the use and care of instruments, geometric constructions, orthographic and auxiliary projection, sketching, and lettering techniques.
- DT 122 ENGINEERING DRAWING** 2(0-6)
Continuation of Drawing I devoted to drafting room practices, threads, gears, and cams, working and assembly drawing, dimensions and sections, and lettering.
- DT 213 ELECTRICAL DRAFTING** 1(0-3)
Symbols for electrical wiring, preparation of drawings for construction, and preparation of drawings for electronic installations such as transmitters.
- DT 214 DESCRIPTIVE GEOMETRY** 1(0-3)
Theory of projection drawing and its application in solving practical problems by projection and revolution of points, lines, planes, and solids.
- DT 215 HIGHWAY DRAFTING** 2(0-6)
Development of working drawings and details for roadway and pavement constructions including alignment, grade, sections, intersections and interchanges.

DT 226 MACHINE DRAFTING 1(0-3)
Machine drafting including projection, cross section, etc., and preparation of plans for manufacturing; blueprinting.

DT 227 STRUCTURAL DRAFTING 2(0-6)
Development of working drawings and details for timber, steel, and concrete structures, including bridges and buildings.

Electrical Technology

ET 211 ALTERNATING-CURRENT CIRCUITS 6(5-3)
Review of direct current circuits and analytical methods. Fundamentals of alternating current components and circuits; voltage, current, power and phase relations in series and parallel circuits containing resistance, inductance and capacitance; complex numbers and "J" factor; admittance, conductance and susceptance; polyphase circuit relations.

ET 212 ELECTRICAL MACHINERY 6(5-3)
Characteristics, construction, application and control of direct current generators and motors; survey of the characteristics, construction, application and control of single-phase and polyphase transformers, generators and motors.

ET 213 ELECTRIC CIRCUITS AND MACHINES 6(5-3)
A survey course for non-electrical students. Includes D-C circuit analysis, generators, motors and associated equipment; single-phase and polyphase a-c circuit analysis, transformers, generators, motors, associated equipment and control circuits.

ET 223 WIRING AND SPECIFICATIONS 4(2-6)
Specification, layout and estimating for industrial, commercial and residential wiring installations including a consideration of the applicable codes, regulations and licenses.

ET 224 ELECTRICAL CONTROL CIRCUITS 4(2-3)
Fundamentals of industrial electronic circuits for the control of electrical machinery and electronic devices; thyratrons, ignitrons and associated circuitry; time delay, photoelectric, comparison and feedback control circuits.

ET 225 ELECTRICAL MACHINERY II 6(5-3)
Characteristics, construction, operation and control of single-phase and polyphase induction and synchronous motors.

Electronics Technology

ELT 211 ELECTRON TUBES AND CIRCUITS 6(5-3)
Characteristics of electron tubes and transistors; study of the diode, triode, pentode, N-P-N, and P-N-P transistors as applied to rectifiers and amplifiers.

ELT 222 ELECTRONIC CIRCUITS AND INSTRUMENTS 4(3-3)
Alternating current and direct current circuit theory applied to electronic circuits; study and use of conventional and advanced electronic instrumentation with VTVM, cathode-ray oscilloscopes, digital counter, bridges, Q-meters, wave analyzer, etc.

ELT 223 COMMUNICATION TECHNIQUES 7(5-6)
Study of communication systems; theory and practical work on A-M and F-M, television, radar, telemetry, etc. Specialized testing equipments, precise frequency and time measurements.

ELT 224 CODES, REGULATIONS AND SPECIFICATIONS**3(2-3)**

Study of FCC Rules and Regulations as applied to Federal radio-phone or maritime telegraph license.

English

ENT 111 ENGLISH**5(5-0)**

Intensive grammar review and practical training in the basic principles of composition. Vocabulary study of standard and technical terms and phraseology. Introduction to principles of public speaking.

ENT 122 ENGLISH**5(5-0)**

A practical course designed to apply the principles of composition to effective business correspondence. Directed supplementary reading. Extemporaneous speeches. Term paper based on specific field of technology.

ENT 223 TECHNICAL REPORTS**2(2-0)**

Study and practice in the fundamentals of technical report writing, including style and the mechanics in preparing reports of various types which are most likely to be used by technicians.

Mathematics

MT 111 ALGEBRA**5(5-0)**

A brief review of high school algebra and geometry, elementary analytic geometry, systems of linear and quadratic equations, bi-nomial theorem and progressions, logarithms, mathematics of investment, exponential functions and rate of natural decay and growth. A computational period of two hours per week is devoted to the use of log-log decitrig slide rule and practical applications of theory in Technical Math I.

MT 122 TRIGONOMETRY**5(5-2)**

A. Analytical trigonometry including thorough study of vectors, trigonometric formulas, identities and equations, graphs of the trigonometric functions, complex notation and vector algebra.

B. An introduction to calculus introduced by graphical methods followed by formal study of differentiation and integration with application to average and instantaneous slopes of functions, maxima and minima, derived curves, uniformly accelerated motion, areas under graphs and volumes by integration. A computational period of two hours per week is devoted to applied problems in numerical trigonometry of the right and oblique triangle with emphasis on the use of the slide rule. Problems in topic calculus.

Industrial Technology

IT 211 STATICS AND STRENGTH OF MATERIALS**5(5-0)**

Forces, resultants, and equilibrium by analytical and graphical methods; stresses in simple trusses; shear and bending moment diagrams. Internal stresses of tension, compression, and shear in beams and columns of timber, concrete, and steel.

IT 212 MATERIALS**3(3-0)**

A study of the most important materials used in engineering work including wood, concrete, steel, etc.

IT 213 TOOL AND DIE DESIGN**3(2-3)**

A practical course in which parts, jigs, fixtures and dies are designed in actual layout on the drawing board. Emphasis is placed on the fundamental purpose of tool and die design to reduce the cost of the finished commodity, to simplify design, save materials and to eliminate unnecessary manufacturing steps.

IT 224 PRODUCTION TECHNOLOGY**5(4-3)**

Plant arrangement and layout for the most effective utilization of space and cost for the modern production type of plant, includes organization control, material flow and handling, working conditions, safety, and other factors as they affect the most satisfactory layout of the plant. Principles and techniques of motion and time study. Detail study of operator movements includes stop-watch time study with emphasis on rating and productions.

IT 225 PERSONNEL SUPERVISION**3(3-0)**

Industrial responsibility, authority, and job instruction. Personnel leadership. Subject concerns the supervisor or foreman as it relates to the cost of materials, production, quality, personnel management, and manager of an industrial department.

IT 226 PRODUCTION AND QUALITY CONTROL**6(5-3)**

Methods of inspecting material produced in a production shop. The planning, scheduling, and dispatching of production in manufacturing operations. Construction of production and its relation to labor, materials, and machines.

Physics

PT 111 PHYSICS I**6(5-3)**

General Physics. An analytical approach to the principles of mechanics, heat, and sound. Emphasis is placed on problem solving and engineering applications. Lectures, problem drill, and laboratory work are coordinated to enable a better understanding of the principles of general physics. Five lecture hours and one three-hour laboratory period per week.

PT 122 PHYSICS II**6(5-3)**

General Physics. A study of electricity and magnetism, light, and a survey of modern physics. Emphasis is placed on problem solving and engineering applications. Five lecture hours and one three-hour laboratory period per week.

Shop Practice

SP 111 GENERAL SHOP**1(0-3)**

The use of basic hand tools, elementary machine and bench work, forging, heat treating, sheetmetal, oxyacetylene and arc welding.

SP 122 GENERAL SHOP**1(0-3)**

A continuation of Shop 111 with advanced projects in the general metals field.

SP 213 MACHINE SHOP**1(0-3)**

The use of precision gauges, taper turning, gear cutting, thread cutting and general machine shop practices.

SP 224 MACHINE SHOP**2(1-3)**

Making student designed tools, working from drawings. Use of precision measuring instruments.

STUDENT ACTIVITIES

Student Council

The student body holds regular elections for class officers and members of the Student Council. This group acts for the students, represents the school, and makes any plans for entertainment which may take place.

Clubs

HONOR SOCIETY. This club is made up of those students who have maintained consistently high grades and have shown evidence of leadership. Membership in the Honor Society is by invitation after certain requirements have been met.

CAMERA CLUB. The Camera Club is composed of those students who are interested in photography as a hobby. The pictures made are used in various school publications and exhibits.

CIVIL CLUB. This club is made up of the boys in Civil Technology who are interested in working on interesting projects other than those taken up in the laboratory work. Membership is by invitation.

GLEE CLUB. The Glee Club is a purely volunteer group made up of students who like to, or are willing to, sing with us. The club represents the school by public appearances, and participation in school events.

SCIENCE CLUB. The aim of this group is to continue study of interesting scientific developments. The group is divided into two sections to interest the first year student as well as the advanced students.

Publications

TECH PATHS. The school issues an annual, Tech Paths, which comes out in May. The staff is elected from the student body, and they do the entire work on the annual. They work with the Camera Club in obtaining pictures for the yearbook and other publicity.

THE TECHNICAL REPORTER. The school paper is edited every month and is a student participation group entirely.

ATHLETICS AND RECREATION

The Gaston Technical Institute offers athletics in a program of two phases, intramural and intercollegiate, to meet the recreational requirements of the students. These activities are available to everyone interested. During the Fall, touch football is the intramural sport in which most of the students take part. The teams are composed of the boys from the different departments of the school. Basketball becomes a major sport during the winter months, and a very rigid schedule is set up within the various athletic teams of the Junior College Circuit. Following the basketball season, a baseball team is organized and games are regularly scheduled with the above group. Softball is enjoyed as an intramural sport within the departments.

The municipal recreational facilities of the City of Gastonia are available to the student body. Other sports include tennis, golf, volleyball, table tennis, bowling, and swimming. The facilities of the new YMCA, which is located four blocks east of the school, will also be available to any who wish to participate.

In addition to the school sponsored activities, students have the opportunity to attend many of the largest athletic contests of the state, including football, basketball, boxing, wrestling, and ice hockey.





1958-59 Baseball Team



1958-59 Student Council and Class Officers

SUCCESS FACTORS FOR TECHNICIANS

1. If you go into a technical career, you will need more and more mathematics.
2. You will be trained in the discipline and practical application of many sciences.
3. You must be precision-minded. Good eyesight and a steady hand are vital.
4. You must be willing to stick to a job until you finish it.
5. You must be able to get along easily with others.
6. You need to have a vital interest in all sciences, not just the one in which you have specialized.
7. You must have, or be willing to acquire, a good vocabulary. Scientific work is full of big words, and each has a very precise definition.

MINIMUM REQUIREMENTS FOR ENGINEERING AIDES

Here are some minimum personal requirements for engineering technician occupations revealed in a survey after one year's employment.

1. **SCIENTIFIC AND ENGINEERING KNOWLEDGE**
Ability to carry through simple analyses, independently, in at least one special field.
2. **MATHEMATICS**
Ability to apply college algebra, analytical geometry, trigonometry, and logarithms.
3. **PLANS, DRAWINGS, DIAGRAMS, AND CODES**
Ability to prepare a variety of simple plans, diagrams and codes.
4. **RESEARCH AND DEVELOPMENT**
Ability to associate new ideas and developments with new technical problems.

Among other technical requirements are the ability to plan and to organize work for a small group, and the ability to convey technical information orally and in writing.



1958 Christmas Dance

$$\begin{array}{r} 29.57 \\ 15.00 \\ \hline 44.57 \end{array}$$